



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

July 9, 1992

OFFICE OF
SOLID WASTE AND EMERGENCY
RESPONSE

Mr. John Hendershot
World Enviro Systems, Inc.
P.O. Drawer 789
Shawnee, Oklahoma 74802

Dear Mr. Hendershot,

This is to respond to your attached letter of March 19, 1992, requesting "EPA's acceptance of the World Enviro Systems, Inc. flexible membrane internal containment/vacuum monitor system for single wall steel or fiberglass tanks as secondary containment with interstitial monitoring..." Unfortunately, EPA does not test, certify, or approve specific brands or products. What follows, however, is a clarification on how EPA's underground storage Tank (UST) regulations apply to the type of system described in your letter. It has been reviewed by representatives of EPA's Office of General Counsel, and of State and EPA Regional UST programs.

In summary, flexible internally fitted liner systems can be shown to meet the Federal requirements for release detection (but not for upgrading or repairing) for both petroleum and hazardous substance USTs if certain conditions are met. Please refer to the discussion below.

Background

Based on information you have provided, our understanding of the type of system at issue is as follows. The system includes a flexible non-metallic internally fitted one piece liner. This liner is situated inside a steel, fiberglass-reinforced plastic or composite UST, and covers the entire inner surface of the tank. There is continuity throughout the interstitial space such that both vapors and liquids can migrate from any part of the interstice to another. The system maintains a vacuum in the interstitial space and triggers an alarm when conditions indicate a breach in any portion of either the liner or in the tank outside the liner. Piping is not addressed by the system.

We further understand that there are currently no codes of practice or standards developed by nationally recognized associations or independent testing laboratories for the design, construction, installation, testing, or maintenance of flexible liners specifically for the storage of petroleum or other regulated substances.

Our clarification is based on the above understandings and may not apply to other types of systems. Also, please note state and local requirements can differ from EPA's.

Release detection for petroleum underground storage tanks

Internally fitted liners are specifically addressed in section 280.43 -“methods of release detection for tanks.” Section 280.43(g) allows interstitial monitoring to be used if the system is designed, constructed and installed to detect a leak from any portion of the tank that routinely contains product, and 280.43(g)(3) allows internally fitted liners, provided that “[f] or tanks with an internally fitted liner, an automated device can detect a release between the inner wall of the tank and the liner, and the liner is compatible with the substance stored.” Compatibility is also required in Section 280.32, which requires that “owners and operators must use an UST system made of or lined with materials that are compatible with the substance stored in the UST system.”

Compatibility testing and documentation can assure owners and operators that a liner is compatible with the material to be stored. There are many test methods available (including EPA's SW-846 Method 9090A) and the data you provided cover many years of testing. EPA does *not*, however, determine whether or not a particular liner is compatible with any substance or blend which could be stored in UST systems.

However, if the liner is compatible with the substance stored and monitored at least every 30 days as required in section 280.41, a system incorporating a flexible membrane could be shown conclusively to meet the release detection requirements for petroleum USTs.

Release detection for hazardous substance USTs

A *hazardous substance* UST system, which is defined in section 280.12, must currently meet, at a minimum, the requirements for a petroleum UST plus additional requirements for hazardous substance UST systems found in section 280.42(b)(2). New systems must meet the additional requirements now; existing systems must meet the additional requirements by December 22, 1998. These additional requirements include secondary containment systems which must be designed, constructed, and installed to:

- " contain regulated substances released from the tank system until they are detected and removed;
- " prevent the release of regulated substances to the environment at any time during the operational life of the UST system; and
- " be checked for evidence of a release at least every 30 days.

The regulations note that the provisions of 40 CFR 265.193 (a portion of the regulations promulgated pursuant to subtitle C of the Resource conservation and Recovery Act that is applicable to tanks storing *hazardous wastes*) may be used to comply with these requirements. We consulted with representatives of EPA's Office of Solid Waste (OSW), who could not state without more extensive review that flexible membrane internal containment systems would meet the requirements of section 265.193. They further recommended that, since most states are authorized to operate their hazardous waste programs; inquiries should be made to the individual states. OSW also recommended the Technical Resource Document for the Storage and Treatment of Hazardous Waste in Tank Systems (EPA/530/SW-86-044, National Technical Information Service PB86-219417/AS) as a helpful resource.

Although compliance with the hazardous waste tank regulations is unresolved, resolution of this question is not necessary to determine compliance with the UST regulations. We believe that a system which incorporates a flexible membrane as described above could meet the requirements of integral secondary containment for both petroleum and hazardous substances if the outer tank is in compliance with all other applicable requirements, including new tank standards now in effect and upgrading standards due to take effect in 1998.

Upgrading of existing UST systems and repairs allowed

Section 280.21 requires that, as of December 22, 1998, all tanks must meet new UST system performance standards, upgrading requirements, or closure requirements. The addition of a flexible liner system alone is not sufficient to meet either the requirements of this section for upgrading, or the requirements of section 280.33 for repairs. These sections require adherence to a code of practice developed by a nationally recognized association or independent testing laboratory, and we know of no such standards developed for the type of system described above.

Conclusion

A system with an internally fitted liner and an automated detection device matching the description above may be capable of meeting the Federal requirements for release detection for both petroleum and hazardous substance USTs if the liner is compatible with the substance stored and if an automated device triggers an alarm when any portion of either the outer tank or inner liner is breached. This same system cannot presently meet Federal requirements for upgrading or repairing existing UST systems.

Many leak detection methods are evaluated against standard test procedures to verify performance. Although such an evaluation is not required by EPA's regulations, it may help owners and operators and State and local governments judge how a system will meet particular needs.

The Office of Underground Storage Tanks encourages innovative approaches to UST problems. We also recognize the importance of nationally recognized associations and testing labs, and encourage developers to work with them in evaluating and documenting the performance of new systems. EPA labs are not currently involved in this area.

Thank you for contacting us and providing us with background information. If you have any questions, please contact David Wiley of my staff at (703) 308-8877.

Sincerely,

/s/

David W. Ziegele, Director
Office of Underground Storage Tanks

Attachment

cc: UST/LUST Regional Program Managers
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